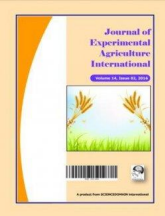

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# Factors Affecting Children Immunization among Rural Farmers in Ondo State, Nigeria

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***Authors' contributions***

*This work was carried out in collaboration between all authors. Authors BOA and IOO designed the study, wrote the protocol and wrote the first draft of the manuscript. Author KEO reviewed the experimental design and all drafts of the manuscript. Authors BOA and KEO managed the analyses of the study. All authors read and approved the final manuscript.*

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## ABSTRACT

The health of any child depends greatly on immunization against certain diseases especially at the early stage of development. Adequate immunization of children serves as a means of preventing them from possible childhood diseases and various health challenges. The study therefore examined factors affecting children immunization among rural farmers in Ondo state, Nigeria. Simple random sampling was used to collect data from 90 respondents. Descriptive statistics and inferential statistics were used in analysing the data. The study revealed that 92.2 percent of the respondents were females. The mean age was 45 years and 63.5 percent were above 40 years. About 76.7 percent were married, 73.6 percent had formal education and 70 percent were farmers by primary occupation. The study also showed that the respondents were aware of children immunization from different sources, which include media sources, personal knowledge, rallies and campaigns, while very few respondents were not aware. The study indicated that the respondents agreed that factors such as; access to information/media, mother's educational level, farmers age, gender, farmers experience, availability of drugs and vaccines to a great extent influences the

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acceptance of children immunization while factors such as Inadequate capital, fear of side effects and unwanted/teenage pregnancy contributes tremendously to the rejection of children immunization.

*Keywords: Children; immunization; farmers.*

## 1. INTRODUCTION

The need for children immunization cannot be over emphasized; this is because children immunization helps prevent certain diseases that are common with children especially at their early stage of development. Adeiga et al. [1], opined that immunization is cost effective in reducing vaccine preventable diseases and to achieve this, there should be high immunization coverage which will in turn promote child health, reduced childhood diseases and death. Immunization coverage in most parts of the developing world Nigeria inclusive has remained low, thereby contributing to high mortality and morbidity among children. Important among reasons for this low coverage are problems arising from knowledge, attitude and perception regarding vaccination [2]. In Nigeria, children immunization is found to be generally low and this limited coverage may be attributable to factors such as lack of proper planning, decreasing motivation of health workers, poor quality of immunization services and low demand for services from the community [3]. Despite the fact that major childhood diseases have been identified by modern technology, yet, children from African countries die in large number from attack of these diseases because of the deep rooted beliefs and attitudes of the people concerning childcare and behavioural practices in health strategies. The Yoruba perceptions about the aetiology of most childhood diseases are a great hindrance to public health programmes and intervention by the government of Nigeria [4]. Although several programmes to increase immunization rates have been developed and implemented but the question still remains that why do parents not immunize their children? It is important to examine the perception of rural households on children immunization. This will enable researchers and policy makers to know the perception of parents with regards to children immunization and this will help in organizing sensitization programs that will prepare the minds of parents towards children immunization. It will help policy makers, health workers and researchers as it will provide basis for further research and development of health policies and extension information package to enhance children immunization in the study area. It is from this foregoing that the study examined the factors affecting children immunization among rural famers' households in Ondo State.

### 1.1 Objectives

The main objective of the study was to examine the factors affecting children immunization among rural famers in Ondo State, Nigeria. The specific objectives were to:

i. determine respondents' awareness about children immunization
ii. evaluate respondents' perception about factors influencing acceptance of children immunization in the study area.

### 1.2 Hypothesis

Ho: there is no relationship between the socio-economic characteristics of the respondents and children immunization.

## 2. METHODOLOGY

The study was carried out in Ondo State, Nigeria. Ondo State is an agrarian state and besides farming, the inhabitants are engaged in various other occupations such as trading, manufacturing and commerce, but people in the riverine areas are predominantly fisher folks. Multi-stage sampling technique was used for data collection. In the first stage, one (1) Local Government Area (LGA) was randomly selected from each of the three (3) geo-political zones of the State, making a total of three LGAs. In the second stage, three rural communities were selected from each of the Local Government Areas making a total of nine communities to be selected across the three local government areas. In the third stage of the sampling, ten respondents were randomly selected from each of the rural communities making a sum total of (90) ninety respondents across the three local government areas selected. Primary data was collected and used. Well structured, validated and pre-tested questionnaire containing open -ended and closed- ended questions, focus group discussion

and interview schedule were used to collect primary data from the respondents. Frequency, mean, standard deviation and chi-square were used to do the analysis of the collected data. Chi –Square was used to show the relationship between the socio-economic characteristics of the respondents and children immunization.

## 3. RESULTS AND DISCUSSION

### 3.1 Respondents' Socio- Economic Characteristics

From Fig. 1, the results showed that 92.2 percent of the respondents were females. This might be due to the fact that the topic cuts across children immunization which is majorly a woman's responsibility to ensure that their children are immunised this was done to get appropriate answers and valid statements which the men may not be aware of or certain about. The mean age was 45 years and 24.7 percent and 23.5 percent were between the age categories of 30-39 years and 40-49 years respectively. This implies that the respondents in the study area were still in their active age, full of strength and vigour to carry out the laborious activities of farming.The study revealed that 76.7 percent of the respondents were married and had a mean household size of 8 with about 74.4 percent of them having a household size of about 6-10 persons. The marital status has influence on the level understanding one has as regards to children health related issues. The kind of household size distribution among the respondents in the study area indicates that the majority of the rural farmers have a large household which is a good source of family labour in the study area.

The figure shows that majority (85.6 percent) of the respondents are literate having one form of formal education or the other while only 14.4 percent had no formal education. It is expected that with such level of education that respondents should understand the need for children immunization. This educational level also shows that most of the rural farmers do not proceed to tertiary institutions which may be due to inadequate funds or not been able to meet the required qualifications of entering a university. This corroborates with the findings of [5] that most farmers in rural areas do not go beyond secondary school. Education is a factor that could aid adoption of innovation or programme by the respondents because education influences adoption of innovation or programme as it gives the farmer opportunity to obtain information from many sources since he could read and write [6]. About 70 percent of them were farmers by primary occupation with majority (77.9 percent) having a farm size of 0.1-5.0 hectares and about 82.1 percent of them had a farming experience of more than 5 years. This support the assertion that most people in the rural areas of Nigeria are engaged in farming as a means of ensuring their livelihood but with scattered and small farm lands [4].

### 3.2 Awareness and Sources of Awareness of Respondents about Children Immunization

Ninety six percent of the respondents interviewed during the focused group discussion attested that they were aware of children immunization. This implies that the respondents in the study area were aware of immunization programme this may be due to the fact that majority (76.7 percent) of them were married and could as a result would have had reasons to immunize their children at one time or the other. The literacy level of the respondents could have also contributed to the awareness; this is because awareness about new innovations or programmes increases with the level of education [7]. The results from the study revealed that respondents' sources of information ranges from rallies and campaigns by health workers /NGOS (53.3 percent), television (36 percent), radio (11 percent) to personal knowledge/ family and friends (1.7 percent). This result contradicts the assertion that immunization coverage in Nigeria has remained low [2]. The findings supports the findings of [8], that the main sources of information about children immunization include health workers town announcers, radio, family members and friends.

### 3.3 Respondents' Perception of Factors Influencing Children Immunization

The study revealed that the respondents agreed that ignorance about basic benefits of immunization ( $\bar{X}$: 4.15), access to information ($\bar{X}$: 4.11), lack of opportunity to be immunized ($\bar{X}$: 4.03),levels of mother's education ($\bar{X}$: 4.01), farmers' age ( $\bar{X}$ : 3.81), gender ( $\bar{X}$: 3.41), ( $\bar{X}$: 4.01), experience ( $\bar{X}$: 3.56), availability of drugs ($\bar{X}$: 3.93), and fear of side effects ($\bar{X}$: 3.79) are major factors influencing their acceptance of children immunization. This trend corroborates with the assertion of [8], that various reasons

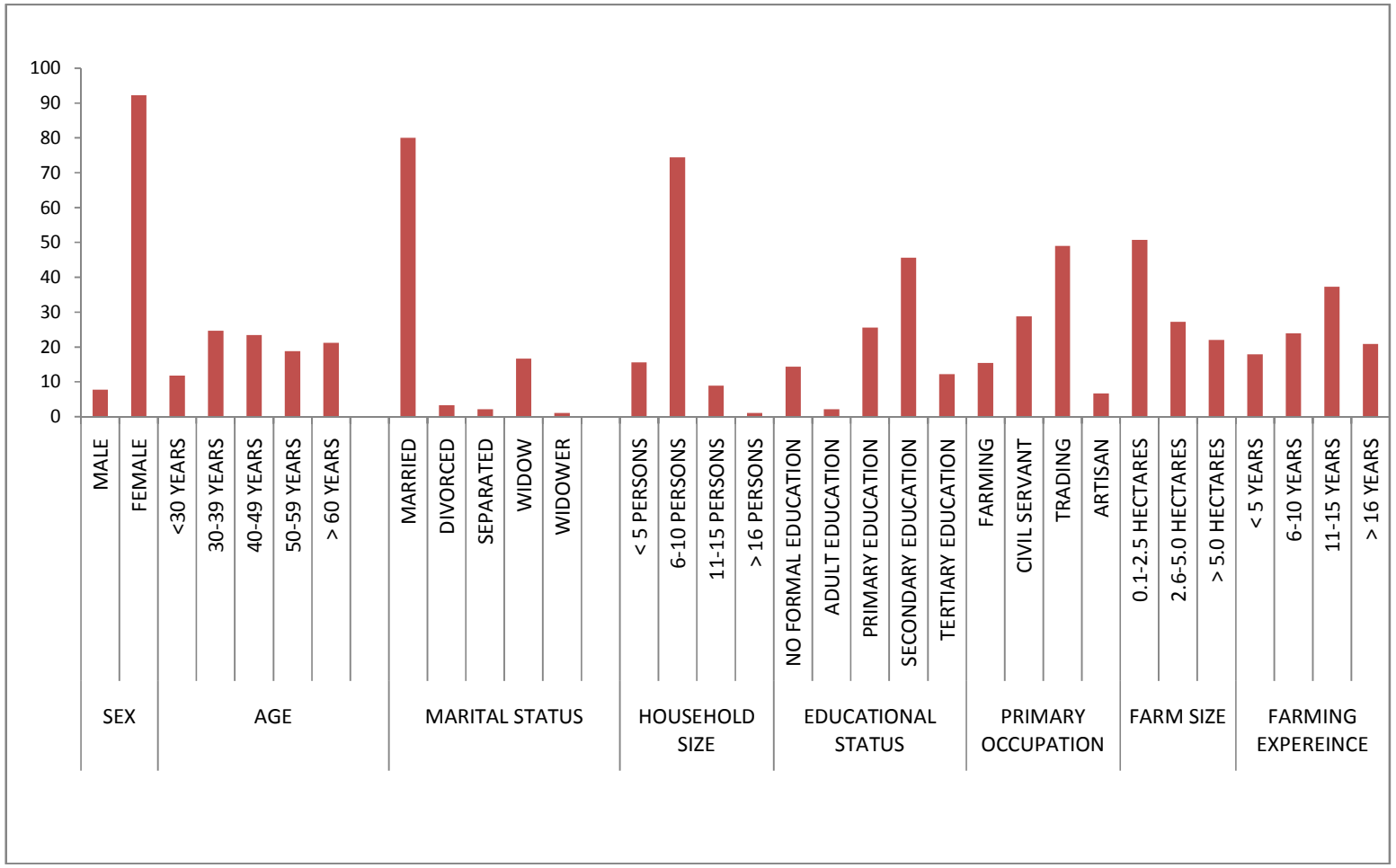


**Fig. 1. Respondents'socio- economic charcteristics**

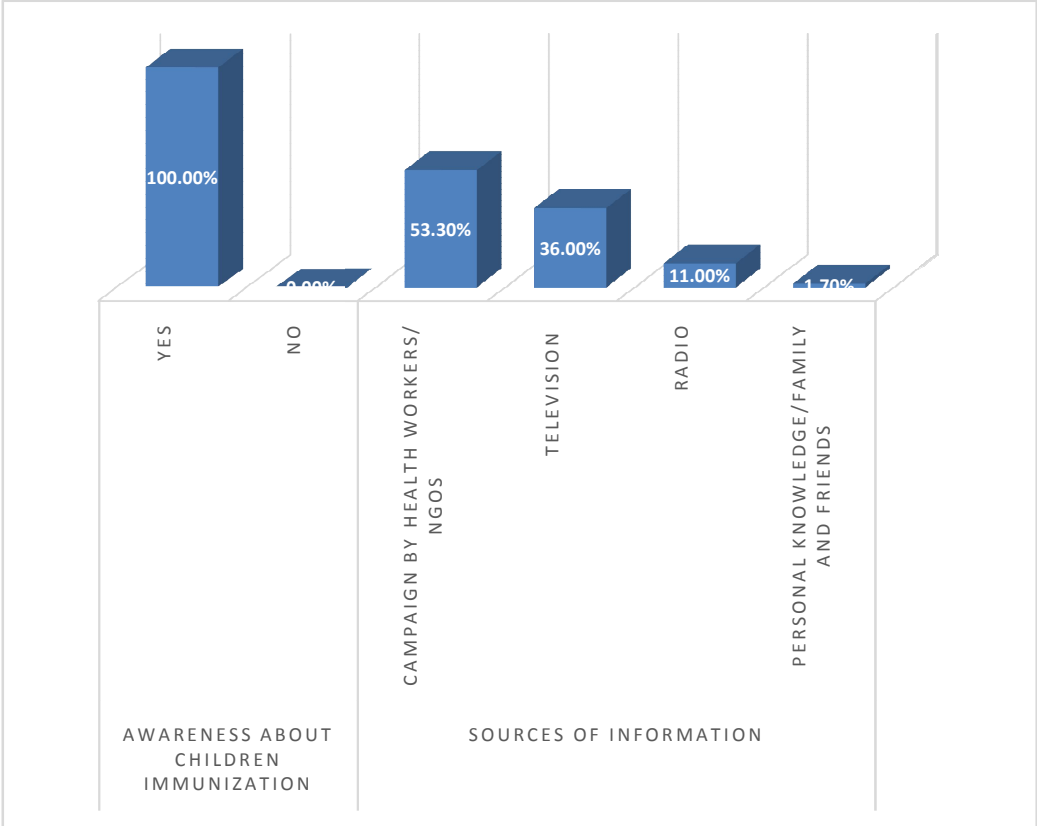


**Fig. 2. Awareness and sources of awareness of respondents about children immunization**

that account for mothers' incomplete vaccination of their children include long waiting time at the health facility, lack of vaccine on the appointment day, absence of personnel at the health facility, child ill-health at the time of immunization, lack of information about the days for vaccination, forgetting the days of immunization, long distance walking, mother's illness on the day of vaccination, social engagements, lack of money, schooling mothers, parents objection, disagreement or concern about immunization safety.

Lack of opportunities to be immunized ($\bar{X}$: 4.03), Fear/rumour ($\bar{X}$: 3.95) of side effects, ignorance about benefits of vaccination ($\bar{X}$: 4.15), lack of vaccines Lack of understanding of the need for multiple doses ( $\bar{X}$ : 3.97), lack of vaccines/supplies ($\bar{X}$: 3.75), loss of immunization cards ( $\bar{X}$ : 3.84) are the major constraints to children immunization. The study showed that the respondents were undecided on whether cost of immunization ( $\bar{X}$ : 3.09), health workers' attitude ($\bar{X}$: 3.47), culture ($\bar{X}$: 2.97) and bad past experience of health programmes influence respondents acceptance of children immunization. The study further indicated that respondents were undecided on whether difficult access ($\bar{X}$: 3.18), poverty/inadequate capital ($\bar{X}$: 2.72), attitudes of health workers ($\bar{X}$: 3.33), long waiting time ($\bar{X}$: 3.36) and limited autonomy for women to leave the house at will are constraints to children immunization.

### 3.4 Chi Square Analysis of the Relationship between the Socio-Economic Characteristics of the Respondents and Children Immunization

The chi square analysis showed that gender, marital status, education and primary occupation of the respondents have significant relationship with immunization of children. This implies that gender, marital status, education and primary occupation influence the decision of respondents to immunize children. This finding agrees with the assertion that respondents' socio economic characteristics influence people's perception about a program or innovation [9].

**Table 1. Respondents' perception of factors influencing children immunization**

| S/N | Factors | SA | A | UD | D | SD | Mean | Remark |
|---|---|---|---|---|---|---|---|---|
| i. | Distance of health centres/hospitals/health workers to community | 12 (15.2) | 49 (62.0) | 5 (6.3) | 11 (13.9) | 2 (2.5) | 2.73 | U |
| ii. | Access to information | 23 (31.1) | 39(52.7) | 9(12.2) | 3(4.1) | - | 4.11 | A |
| iii. | Level of mother's education | 19 (25.0) | 42(55.3) | 12(15.8) | 3 (3.9) | - | 4.01 | A |
| iv. | Age of farmer | 16 (21.9) | 35(47.9) | 15(20.5) | 6 (8.2) | 1 (1.4) | 3.81 | A |
| v. | Former experiences at health facility/outreach, leading to fears, negative expectations, and lack of trust | 7 (9.5) | 14(18.9) | 25(33.8) | 21 (28.4) | 7 (9.5) | 2.91 | U |
| vi. | Child being too sick, too weak for vaccination/fatalism | 1 (1.1) | 12(15.8) | 24(31.6) | 29 (38.2) | 10(13.2) | 2.54 | U |
| vii. | Lack of opportunities to be immunized. | 15 (19.0) | 56(70.9) | 3 (3.8) | 5(6.3) | - | 4.03 | A |
| viii. | Fear/rumour of side effects | 21(26.9) | 41(52.6) | 7(9.0) | 9(11.5) | - | 3.95 | A |
| ix. | Ignorance about basic benefits of immunization. | 21(29.2) | 41(56.9) | 10(13.9) | - | - | 4.15 | A |
| x. | Lack of understanding of need for multiple doses, when and where to return, and that immunization protects against certain specific diseases. | 20(27.4) | 34(46.6) | 17(23.3) | 1(1.4) | 1(1.4) | 3.97 | A |
| xi. | Restricted/inconvenient hours, difficult access. | 8 (12.5) | 19(29.7) | 20(31.3) | 11(17.2) | 6(9.4) | 3.18 | U |
| xii. | Poverty/inadequate capital | 8(11.3) | 14(19.7) | 9(12.7) | 30(42.3) | 10(14.1) | 2.72 | U, |
| xiii. | Health worker attitudes and behaviour; charges (official and unofficial). | 7(10.9) | 24(37.5) | 19(29.7) | 11(17.2) | 3(4.7) | 3.33 | U |
| xiv. | Long waiting time before been attended to at the immunization centres. | 9(12.9) | 25(35.7) | 21(30.0) | 12(17.1) | 3(4.3) | 3.36 | U |
| xv. | Lack of vaccines/ supplies. | 12(17.4) | 36(52.2) | 14(20.3) | 6(8.7) | 1(1.4) | 3.75 | A |
| xvi. | Lost/ unavailable immunization cards. | 21(28.0) | 32(42.7) | 12(16.0) | 9(12.0) | 1(1.3) | 3.84 | A |
| xvii. | Limited autonomy for women even to make the decision to leave the house hinders immunization. | 1(1.3) | 10(13.2) | 29(38.2) | 28(36.8) | 8(10.5) | 2.57 | U |
| xviii. | Religion. | 5(6.7) | 4(5.3) | 21(28.0) | 37(49.3) | 8(10.7) | 2.48 | D |

*Source: Field Survey, 2013.*

*< 1.5 = strongly disagree; 1.5 – 2.49 = disagree; 2.5 - 3.49 = Undecided; 3.5 – 4.49 = agree; 4.5 – 5 = Strongly agree*

**Table 2. Chi square analysis of the relationship between the socio-economic characteristics of the respondents and children immunization**

| Variable | Calculated chi-square | df | Tabulated chi square | Decision |
|---|---|---|---|---|
| Gender | 64.178 | 1 | 3.841 | Significant |
| Marital Status | 187.778 | 4 | 9.488 | Significant |
| Education Level | 76.8 | 5 | 11.070 | Significant |
| Primary Occupation | 50.281 | 3 | 7.815 | Significant |

*P< 0.05*

## 4. CONCLUSION

The study has established that the farmers in the study area were aware of children immunization. The factors affecting children immunization among the respondents includes access to information, level of and age of the mothers among other factors. The study also showed that most of the farmers have embraced children immunization programme as a means of ensuring and improving the health status of their children especially at the early period of child development.

## 5. RECOMMENDATIONS

Based on the findings from this study, the following recommendations were made:

1. Maternal education should be advocated as a strategy to educate parents on the importance of children immunization.
2. Government should see to the provision of more primary healthcare facilities in the rural areas to ensure adequate coverage of and accessibility to the health facilities.
3. There is a need to intensify awareness on the benefits of child immunization since it has been found to combat various infectious diseases and strengthens essential antibody system of the children. This could be achieved through awareness campaigns and enlightenment programs by effective participation of government, NGOs, religion leaders and mass media.
4. Free immunization program should be continued.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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